

# CUMULATIVE INDEXES

## CONTRIBUTING AUTHORS, VOLUMES 13-23

### A

- Aarseth, S. J., 13:1-21  
 Abt, H. A., 21:343-72  
 Aizenman, M. L., 16:215-40  
 Akasofu, S.-I., 20:117-38  
 Allen, R. J., 14:417-45;  
 16:103-39  
 Ambartsumian, V. A., 18:1-13  
 Angel, J. R. P., 16:487-519;  
 18:321-61  
 Athanassoula, E., 23:147-68  
 Audouze, J., 14:43-79

### B

- Bahcall, J. N., 16:241-64  
 Bahcall, N. A., 15:505-40  
 Balick, B., 20:431-68  
 Baliunas, S. L., 23:379-412  
 Barkat, Z., 13:45-68  
 Barshay, S. S., 14:81-94  
 Baym, G., 17:415-43  
 Beckwith, S., 20:163-90  
 Bignami, G. F., 21:67-108  
 Binney, J., 20:399-429  
 Boesgaard, A. M., 23:319-78  
 Böhm-Vitense, E., 19:295-318  
 Borra, E. F., 20:191-220  
 Bosma, A., 23:147-68  
 Bracewell, R. N., 17:113-34  
 Bradt, H. V. D., 21:13-66  
 Brault, J. W., 22:291-317  
 Bridle, A. H., 22:319-58  
 Brown, R. L., 16:445-85;  
 22:223-65  
 Burns, J. A., 15:97-126  
 Burton, W. B., 14:275-306

### C

- Canuto, V., 13:335-80  
 Carbon, D. F., 17:515-49  
 Carson, T. R., 14:95-117  
 Carswell, R. F., 19:41-76  
 Cassen, P., 15:97-126  
 Cassinelli, J. P., 17:275-308  
 Caughlan, G. R., 13:69-112;  
 21:165-76  
 Cesarsky, C. J., 18:289-319  
 Chaffee, F. H. Jr., 14:23-42  
 Chapman, C. R., 16:33-75

- Chevalier, R. A., 15:175-96  
 Chincarini, G. L., 22:445-70  
 Chupp, E. L., 22:359-87  
 Conti, P. S., 16:371-92  
 Coroniti, F. V., 15:389-436  
 Coulman, C. E., 23:19-57  
 Counsleman, C. C. III, 14:197-  
 214  
 Cowling, T. G., 19:115-35;  
 23:1-18  
 Cox, A. N., 18:15-41  
 Cox, J. P., 14:247-73

### D

- Davidson, K., 23:119-46  
 Davis, M., 21:109-30  
 Deubner, F.-L., 22:593-619  
 De Young, D. S., 14:447-74  
 Dravins, D., 20:61-89  
 Dressler, A., 22:185-222  
 Dulk, G. A., 23:169-224

### E

- Eardley, D. M., 13:381-422  
 Edmunds, M. G., 19:77-113  
 Elliot, J. L., 17:445-75  
 Ellis, G. F. R., 22:157-84

### F

- Faber, S. M., 17:135-87  
 Fesen, R. A., 23:119-46  
 Ford, W. K. Jr., 17:189-212  
 Forman, W., 20:547-85  
 Fowler, W. A., 13:69-112;  
 21:165-76  
 Freeman, K. C., 19:319-56

### G

- Gallagher, J. S., 16:171-214;  
 17:135-87; 22:37-74  
 Gault, D. E., 15:97-126  
 Giffard, R. P., 16:521-54  
 Gillett, F. C., 19:411-56  
 Ginzburg, V. L., 13:511-35  
 Giovannelli, R., 22:445-70  
 Goldreich, P., 20:249-83  
 Golub, L., 23:413-52  
 Gorenstein, P., 14:373-416

- Gott, J. R. III, 15:235-66  
 Gough, D., 22:593-619  
 Grasdalen, G. L., 13:187-216  
 Greenstein, J. L., 22:1-35  
 Gursky, H., 15:541-68

### H

- Habing, H. J., 17:345-85  
 Hansen, C. J., 16:15-32  
 Harris, M. J., 21:165-76  
 Harris, W. E., 17:241-74  
 Hartmann, W. K., 16:33-75  
 Haynes, M. P., 22:445-70  
 Heckman, T. M., 20:431-68  
 Heiles, C., 14:1-22  
 Hermesen, W., 21:67-108  
 Hillas, A. M., 22:425-44  
 Ho, P. T. P., 21:239-70  
 Hoag, A. A., 17:43-71  
 Hodge, P. W., 19:357-72  
 Hollenbach, D. J., 18:219-62  
 Holt, S. S., 20:323-65  
 Howard, R., 15:153-73; 22:131-  
 55  
 Hoyle, F., 20:1-35  
 Huebner, W. F., 14:143-72  
 Hunter, D. A., 22:37-74  
 Hurford, G. J., 20:497-516

### I

- Iben, I. Jr., 21:271-342  
 Ionson, J. A., 19:7-40  
 Israel, F. P., 17:345-85

### J

- Jauncey, D. L., 13:23-44  
 Jenkins, E. B., 13:133-64  
 Jones, C., 20:547-85  
 Joss, P. C., 22:537-92  
 Joyce, R. R., 19:411-56

### K

- Kaler, J. B., 23:89-117  
 Kellermann, K. I., 19:373-410  
 Kennel, C. F., 15:389-436  
 Kleinmann, S. G., 19:411-56  
 Knapp, G. R., 16:445-85

Kraft, R. P., 15:309-43  
Kuperus, M., 19:7-40

## L

Labeyrie, A., 16:77-102  
Lada, C. J., 23:267-317  
Landstreet, J. D., 20:191-220  
Larson, H. P., 18:43-75  
Lebofsky, M. J., 17:477-511  
Lecar, M., 13:1-21  
Leovy, C. B., 17:387-413  
Lesh, J. R., 16:215-40  
Lewis, J. S., 14:81-94  
Liebert, J., 18:363-98  
Linsky, J. L., 18:439-88  
Liszt, H. S., 22:223-65  
Lockman, F. J., 16:445-85  
Lubow, S. H., 19:227-93

## M

Manchester, R. N., 15:19-44  
Margon, B., 22:507-36  
Marov, M. Ya., 16:141-69  
Marsh, K. A., 20:497-516  
Mathis, J. S., 17:73-111  
McAlister, H. A., 23:59-87  
McClintock, J. E., 21:13-66  
McCray, R., 17:213-40;  
20:323-65  
McKee, C. F., 18:219-62  
Merrill, K. M., 17:9-41  
Mestel, L., 20:191-220  
Miley, G., 18:165-218  
Moore, R., 23:239-66  
Moran, J. M., 19:231-76  
Morris, M., 20:517-45  
Morrison, D., 20:469-95  
Mould, J. R., 20:91-115

## N

Ness, N. F., 20:139-61  
Newkirk, G. Jr., 21:429-67  
Nicholls, R. W., 15:197-234  
Norris, J., 19:319-56  
Noyes, R. W., 15:363-87

## O

O'Dell, S. L., 14:173-95  
Oort, J. H., 15:295-362; 19:1-5;  
21:373-428  
Öpik, E. J., 15:1-17

## P

Pagel, B. E. J., 19:77-113  
Parker, E. N., 15:45-68  
Pauliny-Toth, I. I. K., 19:373-410  
Payne-Gaposchkin, C., 16:1-13  
Peale, S. J., 14:215-46

Pearson, T. J., 22:97-130  
Peebles, P. J. E., 21:109-30  
Peimbert, M., 13:113-31  
Perley, R. A., 22:319-58  
Peterson, L. E., 13:423-509  
Pethick, C., 17:415-43  
Pettengill, G. H., 16:265-92  
Phillips, T. G., 20:285-321  
Pipher, J. L., 16:335-69  
Podosek, F. A., 16:293-334  
Pollack, J. B., 22:389-424  
Popper, D. M., 18:115-64  
Press, W. H., 13:381-422  
Pringle, J. E., 19:137-62

## R

Rabin, D., 23:239-66  
Racine, R., 17:241-74  
Rappaport, S. A., 22:537-92  
Raymond, J. C., 22:75-95  
Readhead, A. C. S., 22:97-130  
Rees, M. J., 22:471-506  
Reid, M. J., 19:231-76  
Renzini, A., 21:271-342  
Rickard, L. J., 20:517-45  
Rickett, B. J., 15:479-504  
Ridgway, S. T., 17:9-41;  
22:291-317  
Rieke, G. H., 17:477-511  
Robinson, E. L., 14:119-42  
Robinson, L. B., 13:165-85  
Rosner, R., 16:393-428;  
23:413-52

## S

Salpeter, E. E., 15:267-93  
Savage, B. D., 17:73-111  
Schroeder, D. J., 14:23-42  
Schwartz, D. A., 15:541-68  
Schwartz, R. D., 21:209-37  
Shu, F., 19:277-93  
Shull, J. M., 20:163-90  
Smith, A. G., 17:43-71  
Smith, M. G., 19:41-76  
Snow, T. P. Jr., 17:213-40  
Soifer, B. T., 16:335-69;  
21:177-207  
Spicer, D. S., 19:7-40  
Spite, F., 23:225-38  
Spite, M., 23:225-38  
Spitzer, L. Jr., 13:133-64  
Starrfield, S., 16:171-214  
Steigman, G., 14:339-72;  
23:319-78  
Stein, W. A., 14:173-95;  
21:177-207  
Stern, D. P., 20:139-61  
Stockman, H. S., 18:321-61  
Strittmatter, P. A., 14:173-95,  
307-38  
Strom, K. M., 13:187-216  
Strom, R. G., 15:97-126

Strom, S. E., 13:187-216  
Strömberg, B., 21:1-11  
Sunyaev, R. A., 18:537-60  
Svalgaard, L., 16:429-43  
Swings, P., 17:1-7  
Syrovatskii, S. I., 19:163-229

## T

Taylor, J. H., 15:19-44  
Thomas, H.-C., 15:127-51  
Tinsley, B. M., 14:43-79  
Toomre, A., 15:437-78  
Townes, C. H., 21:239-70  
Tremaine, S., 20:249-83  
Tucker, W. H., 14:373-416  
Tyson, J. A., 16:521-54

## V

Vaiana, G. S., 16:393-428;  
23:413-52  
van Altena, W. F., 21:131-64  
van de Kamp, P., 13:295-332  
van den Bergh, S., 13:217-55  
van der Kruit, P. C., 14:417-45;  
16:103-39  
Vauclair, G., 20:37-60  
Vauclair, S., 20:37-60  
Vaughan, A. H., 23:379-412  
Verschuur, G. L., 13:257-93

## W

Wagner, W. J., 22:267-89  
Wannier, P. G., 18:399-437  
Watson, W. D., 16:585-615  
Weedman, D. W., 15:69-95  
Weiss, R., 18:489-537  
Wetherill, G. W., 18:77-113  
Weymann, R. J., 19:41-76  
Whipple, F. L., 14:143-72  
Wilcox, J. M., 16:429-43  
Williams, J. G., 16:33-75  
Williams, R. E., 14:307-38  
Withbroe, G. L., 15:363-87  
Woodward, P. R., 16:555-84  
Woody, D. P., 20:285-321  
Woolf, N. J., 20:367-98  
Wynn-Williams, C. G., 20:587-618

## Y

York, D. G., 20:221-48

## Z

Zel'dovich, Ya. B., 18:537-60  
Zhelezynakov, V. V., 13:511-35  
Zimmerman, B. A., 13:69-112;  
21:165-76  
Zuckerman, B., 18:263-88

## CHAPTER TITLES, VOLUMES 13-23

### PREFATORY CHAPTER

About Dogma in Science and Other Recollections of an Astronomer	E. J. Öpik	15:1-17
The Development of Our Knowledge of Variable Stars	C. Payne-Gaposchkin	16:1-13
A Few Notes on My Career as an Astrophysicist	P. Swings	17:1-7
On Some Trends in the Development of Astrophysics	V. A. Ambartsumian	18:1-13
Some Notes on My Life as an Astronomer	J. H. Oort	19:1-5
The Universe: Past and Present Reflections	F. Hoyle	20:1-35
Scientists I Have Known and Some Astronomical Problems I Have Met	B. Strömgren	21:1-11
An Astronomical Life	J. L. Greenstein	22:1-35
Astronomer by Accident	T. G. Cowling	23:1-18

### SOLAR SYSTEM ASTROPHYSICS

Chemistry of Primitive Solar Material	S. S. Barshay, J. S. Lewis	14:81-94
Physical Processes in Comets	F. L. Whipple, W. F. Huebner	14:143-72
Mercury	D. E. Gault, J. A. Burns, P. Cassen, R. G. Strom	15:97-126
Jupiter's Magnetosphere	C. F. Kennel, F. V. Coroniti	15:389-436
The Asteroids	C. R. Chapman, J. G. Williams, W. K. Hartmann	16:33-75
Results of Venus Missions	M. Ya. Marov	16:141-69
Physical Properties of the Planets and Satellites from Radar Observations	G. H. Pettengill	16:265-92
Isotopic Structures in Solar System Materials	F. A. Podosek	16:293-334
Martian Meteorology	C. B. Leovy	17:387-413
Stellar Occultation Studies of the Solar System	J. L. Elliot	17:445-75
Infrared Spectroscopic Observations of the Outer Planets, Their Satellites, and the Asteroids	H. P. Larson	18:43-75
Formation of Terrestrial Planets	G. W. Wetherill	18:77-113
Planetary Magnetospheres	D. P. Stern, N. F. Ness	20:139-61
The Dynamics of Planetary Rings	P. Goldreich, S. Tremaine	20:249-83
The Satellites of Jupiter and Saturn	D. Morrison	20:469-95
Origin and History of the Outer Planets: Theoretical Models and Observational Constraints	J. B. Pollack	22:389-424

### SOLAR PHYSICS

The Origin of Solar Activity	E. N. Parker	15:45-68
Large-Scale Solar Magnetic Fields	R. Howard	15:153-73
Mass and Energy Flow in the Solar Chromosphere and Corona	G. L. Withbroe, R. W. Noyes	15:363-87
Recent Advances in Coronal Physics	G. S. Vaiana, R. Rosner	16:393-428
A View of Solar Magnetic Fields, the Solar Corona, and the Solar Wind in Three Dimensions	L. Svalgaard, J. M. Wilcox	16:429-43
On the Theory of Coronal Heating	M. Kuiper, J. A. Ionson, D. S. Spicer	19:7-40
High Spatial Resolution Solar Microwave Observations	K. A. Marsh, G. J. Hurford	20:497-516

Variations in Solar Luminosity	G. Newkirk, Jr.	21:429-67
Solar Rotation	R. Howard	22:131-55
Coronal Mass Ejections	W. J. Wagner	22:267-89
High-Energy Neutral Radiations From the Sun	E. L. Chupp	22:359-87
Helioseismology: Oscillations as a Diagnostic of the Solar Interior	F.-L. Deubner, D. Gough	22:593-619
Radio Emission From the Sun and Stars	G. A. Dulk	23:169-224
Sunspots	R. Moore, D. Rabin	23:239-66
<b>STELLAR PHYSICS</b>		
The Structure of Cataclysmic Variables	E. L. Robinson	14:119-42
Nonradial Oscillations of Stars: Theories and Observations	J. P. Cox	14:247-73
Recent Observations of Pulsars	J. H. Taylor, R. N. Manchester	15:19-44
Secular Stability: Applications to Stellar Structure and Evolution	C. J. Hansen	16:15-32
Theory and Observations of Classical Novae	J. S. Gallagher, S. Starrfield	16:171-214
The Observational Status of $\beta$ Cephei Stars	J. R. Lesh, M. L. Aizenman	16:215-40
Mass Loss in Early-Type Stars	P. S. Conti	16:371-92
Magnetic White Dwarfs	J. R. P. Angel	16:487-519
Infrared Spectroscopy of Stars	K. M. Merrill, S. T. Ridgway	17:9-41
Stellar Winds	J. P. Cassinelli	17:275-308
On the Nonhomogeneity of Metal Abundances in Stars of Globular Clusters and Satellite Subsystems of the Galaxy	R. P. Kraft	17:309-43
Physics of Neutron Stars	G. Baym, C. Pethick	17:415-43
Model Atmospheres for Intermediate- and Late-Type Stars	D. F. Carbon	17:513-49
The Masses of Cepheids	A. N. Cox	18:15-41
Stellar Masses	D. M. Popper	18:115-64
Envelopes Around Late-Type Giant Stars	B. Zuckerman	18:263-88
White Dwarf Stars	J. Liebert	18:363-98
Stellar Chromospheres	J. L. Linsky	18:439-88
Mass, Angular Momentum, and Energy Transfer in Close Binary Stars	F. H. Shu, S. H. Lubow	19:277-93
The Effective Temperature Scale	E. Böhm-Vitense	19:295-318
Element Segregation in Stellar Outer Layers	S. Vauclair, G. Vauclair	20:37-60
Photospheric Spectrum Line Asymmetries and Wavelength Shifts	D. Dravins	20:61-89
Magnetic Stars	E. F. Borra, J. D. Landstreet, L. Mestel	20:191-220
The Search for Infrared Protostars	C. G. Wynn-Williams	20:587-618
The Optical Counterparts of Compact Galactic X-Ray Sources	H. V. D. Bradt, J. E. McClintock	21:13-66
Galactic Gamma-Ray Sources	G. F. Bignami, W. Hermsen	21:67-108
Herbig-Haro Objects	R. D. Schwartz	21:209-37
Asymptotic Giant Branch Evolution and Beyond	I. Iben, Jr., A. Renzini	21:271-342
Normal and Abnormal Binary Frequencies	H. A. Abt	21:343-72
Observations of Supernova Remnants	J. C. Raymond	22:75-95
High Angular Resolution Measurements of Stellar Properties	H. A. McAlister	23:59-87
Planetary Nebulae and Their Central Stars	J. B. Kaler	23:89-117
Radio Emission From the Sun and Stars	G. A. Dulk	23:169-224
The Composition of Field Halo Stars and the Chemical Evolution of the Halo	M. Spite, F. Spite	23:225-38
Stellar Activity Cycles	S. L. Baliunas, A. H. Vaughan	23:379-412
On Stellar X-Ray Emission	R. Rosner, L. Golub, G. S. Vaiana	23:413-52
<b>DYNAMICAL ASTRONOMY</b>		
Computer Simulations of Stellar Systems	S. J. Aarseth, M. Lecar	13:1-21
Unseen Astrometric Companions of Stars	P. van de Kamp	13:295-333
Radio Astrometry	C. C. Counselmann III	14:197-214

Orbital Resonances in the Solar System	S. J. Peale	14:215-46
Theories of Spiral Structure	A. Toomre	15:437-78
Astrometry	W. F. van Altena	21:131-64
<b>INTERSTELLAR MEDIUM</b>		
Ultraviolet Studies of the Interstellar Gas	L. Spitzer, Jr., E. B. Jenkins	13:133-64
Young Stellar Objects and Dark Interstellar Clouds	S. E. Strom, K. M. Strom, G. L. Grasdalen	13:187-216
The Interstellar Magnetic Field	C. Heiles	14:1-22
The Interaction of Supernovae with the Interstellar Medium	R. A. Chevalier	15:175-96
Formation and Destruction of Dust Grains	E. E. Salpeter	15:267-93
Interstellar Scattering and Scintillation of Radio Waves	B. J. Rickett	15:479-504
Radio Recombination Lines	R. L. Brown, F. J. Lockman, G. R. Knapp	16:445-85
Gas Phase Reactions in Astrophysics	W. D. Watson	16:585-615
Observed Properties of Interstellar Dust	B. D. Savage, J. S. Mathis	17:73-111
The Violent Interstellar Medium	R. McCray, T. P. Snow, Jr.	17:213-40
Compact H II Regions and OB Star Formation	H. J. Habing, F. P. Israel	17:345-85
Interstellar Shock Waves	C. F. McKee, D. J. Hollenbach	18:219-62
Cosmic-Ray Confinement in the Galaxy	C. J. Cesarsky	18:289-319
Nuclear Abundances and Evolution of the Interstellar Medium	P. G. Wannier	18:399-437
Interstellar Molecular Hydrogen	J. M. Shull, S. Beckwith	20:163-90
Herbig-Haro Objects	R. D. Schwartz	21:209-37
Interstellar Ammonia	P. T. P. Ho, C. H. Townes	21:239-70
Observations of Supernova Remnants	J. C. Raymond	22:75-95
The Influence of Environment on the H I Content of Galaxies	M. P. Haynes, R. Giovanelli, G. L. Chincarini	22:445-70
Planetary Nebulae and Their Central Stars	J. B. Kaler	23:89-117
Cold Outflows, Energetic Winds, and Enigmatic Jets Around Young Stellar Objects	C. J. Lada	23:267-317
<b>SMALL STELLAR SYSTEMS</b>		
Consequences of Mass Transfer in Close Binary Systems	H.-C. Thomas	15:127-51
Theoretical Models of Star Formation	P. R. Woodward	16:555-84
Mass, Angular Momentum, and Energy Transfer in Close Binary Stars	F. H. Shu, S. H. Lubow	19:277-93
The Chemical Composition, Structure, and Dynamics of Globular Clusters	K. C. Freeman, J. Norris	19:319-56
Normal and Abnormal Binary Frequencies	H. A. Abt	21:343-72
<b>THE GALAXY</b>		
High-Velocity Neutral Hydrogen	G. L. Verschuur	13:257-93
The Morphology of Hydrogen and of Other Tracers in the Galaxy	W. B. Burton	14:275-306
The Galactic Center	J. H. Oort	15:295-362
Cosmic-Ray Confinement in the Galaxy	C. J. Cesarsky	18:289-319
The Chemical Composition, Structure, and Dynamics of Globular Clusters	K. C. Freeman, J. Norris	19:319-56
Stellar Populations in the Galaxy	J. R. Mould	20:91-115
Gas in the Galactic Halo	D. G. York	20:221-48
The Optical Counterparts of Compact Galactic X-Ray Sources	H. V. D. Bradt, J. E. McClintock	21:13-66
Galactic Gamma-Ray Sources	G. F. Bignami, W. Hermsen	21:67-108
Sagittarius A and Its Environment	R. L. Brown, H. S. Liszt	22:223-65
Neutron Stars in Interacting Binary Systems	P. C. Joss, S. A. Rappaport	22:537-92

## EXTRAGALACTIC ASTRONOMY

Chemical Composition of Extragalactic Gaseous Nebulae	M. Peimbert	13:113-31
Stellar Populations in Galaxies	S. van den Bergh	13:217-55
Chemical Evolution of Galaxies	J. Audouze, B. M. Tinsley	14:43-79
The Radio Continuum Morphology of Spiral Galaxies	P. C. van der Kruit, R. J. Allen	14:417-45
Extended Extragalactic Radio Sources	D. S. De Young	14:447-74
Seyfert Galaxies	D. W. Weedman	15:69-95
Clusters of Galaxies	N. A. Bahcall	15:505-40
The Kinematics of Spiral and Irregular Galaxies	P. C. van der Kruit, R. J. Allen	16:103-39
Masses and Mass-to-Light Ratios of Galaxies	S. M. Faber, J. S. Gallagher	17:135-87
Globular Clusters in Galaxies	W. E. Harris, R. Racine	17:241-74
Infrared Emission of Extragalactic Sources	G. H. Rieke, M. J. Lebofsky	17:477-511
The Structure of Extended Extragalactic Radio Sources	G. Miley	18:165-218
Optical and Infrared Polarization of Active Extragalactic Objects	J. R. P. Angel, H. S. Stockman	18:321-61
Absorption Lines in the Spectra of Quasistellar Objects	R. J. Weymann, R. F. Carswell, M. G. Smith	19:41-76
Abundances in Stellar Populations and the Interstellar Medium in Galaxies	B. E. J. Pagel, M. G. Edmunds	19:77-113
Compact Radio Sources	K. I. Kellermann, I. I. K. Pauliny-Toth	19:373-410
Dynamics of Elliptical Galaxies and Other Spheroidal Components	J. Binney	20:399-429
Extranuclear Clues to the Origin and Evolution of Activity in Galaxies	B. Balick, T. M. Heckman	20:431-68
Molecular Clouds in Galaxies	M. Morris, L. J. Rickard	20:517-45
X-Ray-Imaging Observations of Clusters of Galaxies	W. Forman, C. Jones	20:547-85
Dust in Galaxies	W. A. Stein, B. T. Soifer	21:177-207
Superclusters	J. H. Oort	21:373-428
Structure and Evolution of Irregular Galaxies	J. S. Gallagher, III, D. A. Hunter	22:37-74
The Evolution of Galaxies in Clusters	A. Dressler	22:185-222
Extragalactic Radio Jets	A. H. Bridle, R. A. Perley	22:319-58
Black Hole Models for Active Galactic Nuclei	M. J. Rees	22:471-506
Shells and Rings Around Galaxies	E. Athanassoula, A. Bosma	23:147-68

## OBSERVATIONAL PHENOMENA

The BL Lacertae Objects	W. A. Stein, S. L. O'Dell, P. A. Strittmatter	14:173-95
The Line Spectra of Quasi-Stellar Objects	P. A. Strittmatter, R. E. Williams	14:307-38
Soft X-Ray Sources	P. Gorenstein, W. H. Tucker	14:373-416
Extragalactic X-Ray Sources	H. Gursky, D. A. Schwartz	15:541-68
Masses of Neutron Stars and Black Holes in X-Ray Binaries	J. N. Bahcall	16:241-64
Infrared Spectroscopic Observations of the Outer Planets, Their Satellites, and the Asteroids	H. P. Larson	18:43-75
Optical and Infrared Polarization of Active Extragalactic Objects	J. R. P. Angel, H. S. Stockman	18:321-61
Measurements of the Cosmic Background Radiation	R. Weiss	18:489-537
Preliminary Results of the Air Force Infrared Sky Survey	S. G. Kleinmann, F. C. Gillett, R. R. Joyce	19:411-56
Spectra of Cosmic X-Ray Sources	S. S. Holt, R. McCray	20:323-65
Galactic Gamma-Ray Sources	G. F. Bignami, W. Hermsen	21:67-108
The Evolution of Galaxies in Clusters	A. Dressler	22:185-222
Observations of SS 433	B. Margon	22:507-36

Recent Developments Concerning the Crab Nebula	K. Davidson, R. A. Fesen	23:119-46
<b>GENERAL RELATIVITY AND COSMOLOGY</b>		
Radio Surveys and Source Counts	D. L. Jauncey	13:23-44
Astrophysical Processes Near Black Holes	D. M. Eardley, W. H. Press	13:381-422
Observational Tests of Antimatter Cosmologies	G. Steigman	14:339-72
Recent Theories of Galaxy Formation	J. R. Gott III	15:235-66
Gravitational-Wave Astronomy	J. A. Tyson, R. P. Gifford	16:521-54
Measurements of the Cosmic Background Radiation	R. Weiss	18:489-537
Microwave Background Radiation as a Probe of the Contemporary Structure and History of the Universe	R. A. Sunyaev, Ya. B. Zel'dovich	18:537-60
The Extragalactic Distance Scale	P. W. Hodge	19:357-72
Evidence for Local Anisotropy of the Hubble Flow	M. Davis, P. J. E. Peebles	21:109-30
Alternatives to the Big Bang	G. F. R. Ellis	22:157-84
Big Bang Nucleosynthesis: Theories and Observations	A. M. Boesgaard, G. Steigman	23:319-78
<b>INSTRUMENTATION AND TECHNIQUES</b>		
On-Line Computers for Telescope Control and Data Handling	L. B. Robinson	13:165-85
Instrumental Technique in X-Ray Astronomy	L. E. Peterson	13:423-509
Astronomical Applications of Echelle Spectroscopy	F. H. Chaffee, Jr., D. J. Schroeder	14:23-42
Stellar Interferometry Methods	A. Labeyrie	16:77-102
Instrumentation for Infrared Astronomy	B. T. Soifer, J. L. Pipher	16:335-69
Advances in Astronomical Photography at Low Light Levels	A. G. Smith, A. A. Hoag	17:43-71
Computer Image Processing	R. N. Bracewell	17:113-34
Digital Imaging Techniques	W. K. Ford, Jr.	17:189-212
Millimeter- and Submillimeter-Wave Receivers	T. G. Phillips, D. P. Woody	20:285-321
High Resolution Imaging from the Ground	N. J. Woolf	20:367-98
Astrometry	W. F. van Altena	21:131-64
Image Formation by Self-Calibration in Radio Astronomy	T. J. Pearson, A. C. S. Readhead	22:97-130
Astronomical Fourier Transform Spectroscopy Revisited	S. T. Ridgway, J. W. Brault	22:291-317
Fundamental and Applied Aspects of Astronomical "Seeing"	C. E. Coulman	23:19-57
High Angular Resolution Measurements of Stellar Properties	H. A. McAlister	23:59-87
<b>PHYSICAL PROCESSES</b>		
Neutrino Processes in Stellar Interiors	Z. Barkat	13:45-68
Thermonuclear Reaction Rates, II	W. A. Fowler, G. R. Caughlan, B. A. Zimmerman	13:69-112
Equation of State at Ultrahigh Densities, II	V. Canuto	13:335-80
On the Pulsar Emission Mechanisms	V. L. Ginzburg, V. V. Zheleznyakov	13:511-35
Stellar Opacity	T. R. Carson	14:95-117
Transition Probability Data for Molecules of Astrophysical Interest	R. W. Nicholls	15:197-234
Interstellar Shock Waves	C. F. McKee, D. J. Hollenbach	18:219-62
Nuclear Abundances and Evolution of the Interstellar Medium	P. G. Wannier	18:399-437
The Present Status of Dynamo Theory	T. G. Cowling	19:115-35
Accretion Discs in Astrophysics	J. E. Pringle	19:137-62
Pinch Sheets and Reconnection in Astrophysics	S. I. Syrovatskii	19:163-229
Masers	M. J. Reid, J. M. Moran	19:231-76

Interaction Between a Magnetized Plasma Flow and a Strongly Magnetized Celestial Body with an Ionized Atmosphere: Energetics of the Magnetosphere	S.-I. Akasofu	20:117-38
Interstellar Molecular Hydrogen	J. M. Shull, S. Beckwith	20:163-90
The Optical Counterparts of Compact Galactic X-Ray Sources	H. V. D. Bradt, J. E. McClintock	21:13-66
Thermonuclear Reaction Rates, III	M. J. Harris, W. A. Fowler, G. R. Caughlan, B. A. Zimmerman	21:165-76
The Origin of Ultra-High-Energy Cosmic Rays	A. M. Hillas	22:425-44
Observations of SS 433	B. Margon	22:507-36



